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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,987	09/25/2003	Jui Yang Chang	4089SF	9769

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EXAMINER

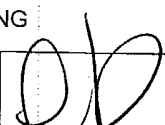
YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/672,987	Applicant(s) CHANG, JUI YANG	
	Examiner Sam Chuan C. Yao	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original disclosure fails to provide sufficient support to a newly claimed subject matter of: injecting a gas into a foamable material and also filling the foamable material with a foaming agent. In fact, the original disclosure teaches alternatively injecting a gas or filling a foaming agent to a foamable material (specification: page 2 lines 15-26; page 5 lines 7-19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1733

4. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esakov et al (US 3,930,917) in view of WO 99/10220.

Esakov et al, drawn to making a laminated foam core, substantially teaches the process recited in claim 1 (abstract; col. 2 line 24 to col. 3 line figure 1).

Although not explicitly disclosed, the extruded foam core sheet and a pair of heated plastic sheets must be inherently cooled at least under ambient condition.

In any event, it would have been an obvious expediency in the art to subject a laminated foam core to a cooling operation in order to accelerate the hardening of a foam core sheet and accelerate the cooling of a pair of plastic covering layers. After a laminated foam core has sufficiently cooled, it must be inherently cut to a suitable dimension. In any event, it would have been obvious in the art to cut a resultant laminated foam core, because it is conventional in the art to cut a laminated foam core into a suitable dimension for a desired end-used of the laminated foam core.

Esakov et al does not teach injecting a gas into a foamable core material.

However, it would have been obvious in the art to inject a gas to a foamable core material in a process taught by Esakov et al as such is conventional in the art as exemplified in the teachings of WO '220 (page 8 full paragraph 1; figure 3). Note: Esakov teaches using "*expanding aged or directly extruded thermoplastic foam sheet by heat until the foam has reached its softening point*" (abstract).

With respect to claim 6, an alternative conventional way to form a foamable material is to incorporate a blowing agent to an extruded thermoplastic material.

Art Unit: 1733

Moreover, it is now well settled "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose ... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F2d 846, 205 USPQ 1069, CCPA 1980). Likewise, it would have been obvious to one having ordinary skill in the art to combine two known processes (i.e. the use of a foaming agent and an injection of a gas) of expanding a foamable material, each of which is taught by the prior art to be useful for the same purpose, to form a new process to be used for the same purpose. For these reasons, this claim would have been obvious in the art.

5. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dukess (US 4,107,247) in view of WO 99/10220.

Dukess, drawn to making a laminated foam core, substantially teaches the process recited in claim 1 (col. 3 line 33 to col. 4 line 42; figure 1).

Dukess does not teach injecting a gas to a foamable core material. However, it would have been obvious in the art to inject a gas to a foamable core material in a process taught by Dukess as such is conventional in the art as exemplified in the teachings of WO '220 (page 8 full paragraph 1; figure 3). NOTE: the recited squeezing step in claim 1 reads on the co-extrusion process taught by Dukess.

As heat-melted thermoplastic skin layers (A,B) and a heated foamable core layer

are extruded out of an extrusion die, since the three layers are squeezed through the extrusion die to form a multi-layered co-extruded sheet (i.e. board).

Although not explicitly disclosed, the extruded foam core sheet and a pair of heated plastic sheets must be inherently cooled at least under ambient condition.

In any event, it would have been an obvious expediency in the art to subject a laminated foam core to a cooling operation in order to accelerate the hardening of a foam core sheet and a pair of plastic covering layers. After a laminated foam core has sufficiently cooled, it must be inherently cut to a suitable dimension. In any event, it would have been obvious in the art to cut a resultant laminated foam core, because it is conventional in the art to cut a laminated foam core into a suitable dimension for a desired end-used of the laminated foam core

Esakov et al does not teach injecting a gas into a foamable core material.

However, it would have been obvious in the art to inject a gas to a foamable core material in a process taught by Esakov et al as such is conventional in the art as exemplified in the teachings of WO '220 (page 8 full paragraph 1; figure 3). Note: Esakov teaches using *"expanding aged or directly extruded thermoplastic foam sheet by heat until the foam has reached its softening point"* (abstract).

With respect to claim 6, an alternative conventional way to form a foamable material is to incorporate a blowing agent to an extruded thermoplastic material.

Moreover, it is now well settled "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same

Art Unit: 1733

purpose ... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F2d 846, 205 USPQ 1069, CCPA 1980). Likewise, it would have been obvious to one having ordinary skill in the art to combine two known processes (i.e. the use of a foaming agent and an injection of a gas) of expanding a foamable material, each of which is taught by the prior art to be useful for the same purpose, to form a new process to be used for the same purpose. For these reasons, this claim would have been obvious in the art.

6. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eslinger et al (US 4,221,624) in view of WO 99/10220 for essentially the same reasons set forth in numbered paragraph 5 above. See column 3 line 33 to column 4 line 42 and figure 1 of the Eslinger et al patent.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 4,5 or 6 as applied to claim 1 above, and further in view of either Ishiwatari et al (US 5,958,164) or Reedy et al (US 5,302,624).

It would have been obvious in the art to inject gases such as carbon dioxide or butane to a foamable core layer before the layers are extruded through an extrusion die such as is notoriously well known in the art as exemplified in the teachings of Ishiwatari et al (abstract; col. 9 lines 13-21; col. 14 lines 5-13) or Reedy et al (abstract; col. 2 lines 55-63).

It is worth noting that: Ishiwatari et al teaches cutting laminated foamed/film article to a desired dimension (figure 3).

Response to Arguments

8. Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection.

NOTE: the claims as presently recited reads on injecting gas to a foamable material to form a foamed sheet, wherein the foamed sheet may be laminated with a pair of covering plastic materials immediately in the same process line or later in a different processing line. For this reason, Counsel's arguments set forth on page 7 last two paragraphs to page 8 line 6 are not commensurate with the scope of the recited claim. In any event, Counsel's argument is moot in light of the WO 99/10220 patent (figure 3).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1733

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
09-01-04